

DEPARTMENT of ENVIRONMENTAL SERVICES
Water Division - Watershed Management Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: BABBIDGE RESERVOIR	Lake Area (ha): 12.54
Town: ROXBURY	Maximum depth (m): 7.9
County: Cheshire	Mean depth (m): 2.5
River Basin: Connecticut	Volume (m ³): 314500
Latitude: 42°56'06" N	Relative depth: 1.5
Longitude: 72°13'01" W	Shore configuration: 1.67
Elevation (ft): 959	Areal water load (m/yr): 57.62
Shore length (m): 2100	Flushing rate (yr ⁻¹): 23.00
Watershed area (ha): 1424.5	P retention coeff.: 0.33
% watershed ponded: 3.0	Lake type: natural w/dam

<u>BIOLOGICAL:</u>		15 February 2000	29 July 1999
DOM. PHYTOPLANKTON (% TOTAL)	#1	NO WINTER PLANKTON	CHRYOSOPHAERELLA 80%
	#2	ANALYZED	DINOBYRON 15%
	#3		
PHYTOPLANKTON ABUNDANCE (units/mL)			
CHLOROPHYLL-A (µg/L)			4.76
DOM. ZOOPLANKTON (% TOTAL)	#1		POLYARTHRA 42%
	#2		NAUPLIUS LARVA 31%
	#3		SYNCHAETA 11%
ROTIFERS/LITER			60
MICROCRUSTACEA/LITER			40
ZOOPLANKTON ABUNDANCE (#/L)			103
VASCULAR PLANT ABUNDANCE			Scattered
SECCHI DISK TRANSPARENCY (m)			4.2
BOTTOM DISSOLVED OXYGEN (mg/L)		11.1	0.4
BACTERIA (E. coli, #/100 ml)	#1		3
	#2		
	#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 2.8
Hypolimnion volume (m³) : None
Anoxic volume (m³) : 12750

CHEMICAL:

Lake: BABBIDGE RESERVOIR

Town: ROXBURY

	15 February 2000		29 July 1999		
DEPTH (m)	2.5	5.0	1.5		4.0
pH (units)	5.4	5.5	6.6		5.5
A.N.C. (Alkalinity)	-1.2	1.0	1.7		1.0
NITRATE NITROGEN	0.06	0.05	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN	< 0.10	< 0.10	0.16		0.22
TOTAL PHOSPHORUS	0.005	0.010	0.005		0.012
CONDUCTIVITY (μ mhos/cm)	23.4	25.0	22.8		23.1
APPARENT COLOR (cpu)	11	12	14		22
MAGNESIUM			0.58		
CALCIUM			1.2		
SODIUM			1.6		
POTASSIUM			0.54		
CHLORIDE	< 2	2	< 2		< 2
SULFATE	6	6	4		4
TN : TP			32		18
CALCITE SATURATION INDEX			4.4		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1999

D.O. S.D. PLANT CHL TOTAL CLASS

**	2	1	1	4	Oligo.
----	---	---	---	---	--------

COMMENTS:

1. This is part of the public water supply system for the City of Keene. Fishing, boating and swimming are prohibited on the reservoir. Access is via a gated and locked road controlled by the Public Works Department.
2. The water level was down 6 or 7 feet during the summer sampling. The maximum depth listed on the opposite page is estimated based on full pool conditions, but the bathymetric map and the calculated mean depth and volume are based on the actual soundings at the low lake level.
3. This is a somewhat acidic, low ANC, clearwater pond with low nutrient and ion levels.

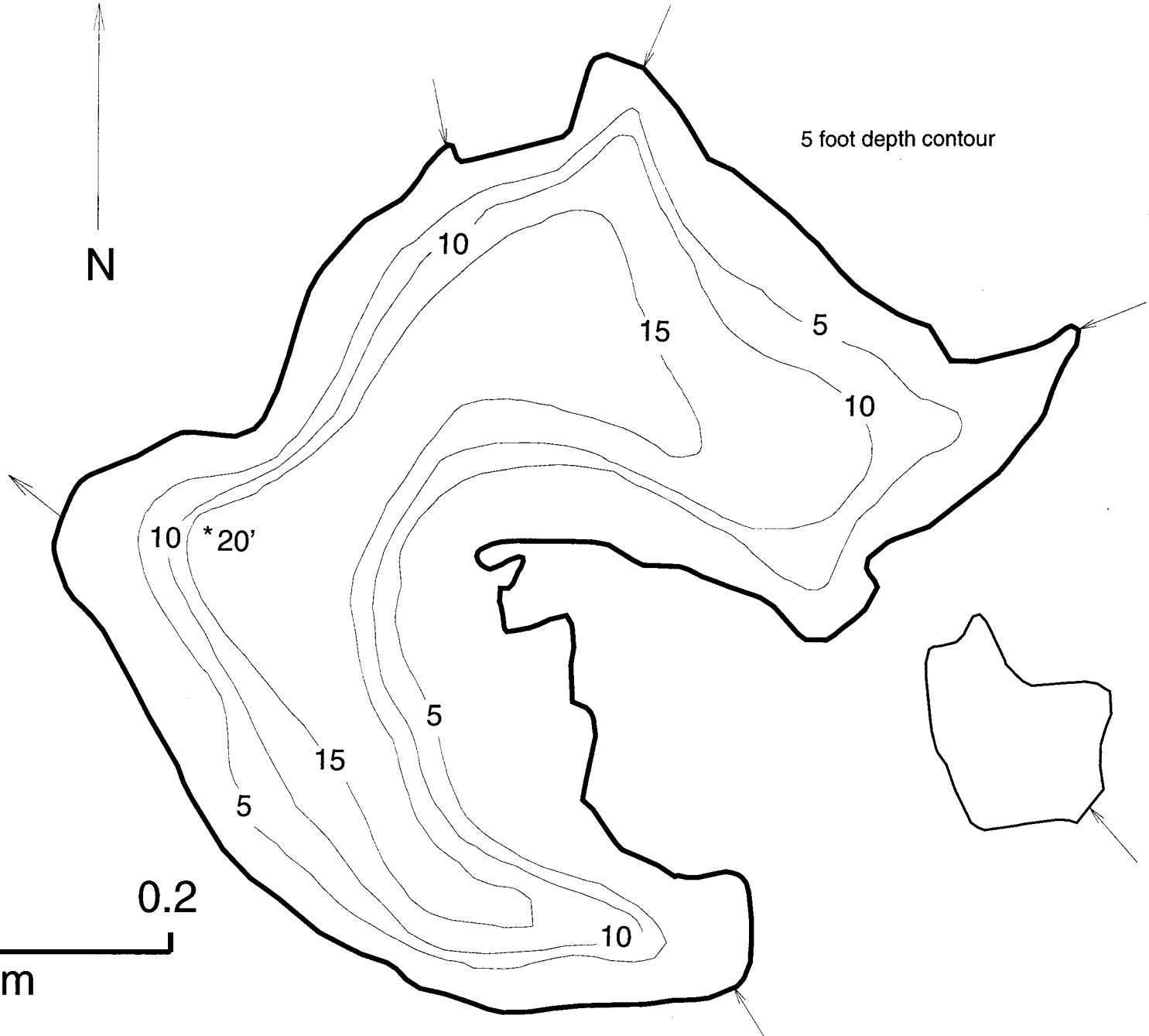
Babbidge Reservoir

Roxbury



N

5 foot depth contour



III-4

0

0.2

Km

LAKE: BABBIDGE RESERVOIR
DATE: 07/29/1999

WEATHER: MOSTLY CLOUDY; SPRINKLES

```
SECCHI DISK (m): 4.2
BOTTOM DEPTH (m): 5.4
TIME: 1130
```

No true hypolimnion existed but a thermocline was present and a dissolved oxygen depletion occurred in the bottom waters.

III-5

[illegible]